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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,596	04/20/2001	Giuseppe Croce	99AG39853288	1496

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EXAMINER	
NADAV, ORI	
ART UNIT	PAPER NUMBER

2811

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,596

Applicant(s)

CROCE ET AL.

Examiner

ori nadav

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period of Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-25 is/are pending in the application.
- 4a) Of the above claim(s) 19-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 5 is rejected under 35 U.S.C. 102(b) as anticipated by Huang (5,665,988).

Regarding claim 5, Huang teach in figure 1 and related text lateral diffused metal oxide semiconductor (LDMOS) integrated device comprising: a semiconductor substrate 1; a drain region 2 of a first conductivity type n- adjacent the semiconductor substrate and comprising a superficial buffer region 13 being more heavily doped n+ than adjacent portions of the drain region; a body region 9 surrounded on a bottom and sides thereof by the buffer region 13 and having a second conductivity type p; and a source region 11 in the body region 9 and having the first conductivity type n+.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6-11 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang for reasons of record, as recited in previous office action (paper 18).

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang in view of Contiero et al. (5,041,895) for reasons of record, as recited in previous office action (paper 18).

Response to Arguments

3. Applicant argues that Huang teaches in figure 1 layer 8 as being the drain region and not layer 2, and drain region 8 does not include buffer region 13.

4. Although Huang teaches layer 8 as being the drain region, layer 2 can be held as being part of the drain region, because layer 2 has the same conductivity type as that of drain region and both layers contacting each other wherein drain region 8 is formed therein. Furthermore, in response to applicant's argument that drain region 8 does not include buffer region 13, the upper right side of buffer region 13 is formed within drain region 8. Therefore, drain region 8 does include buffer region 13.

5. Applicant argues that Huang teaches an IGBT device and not an LDMOS.

Huang teaches in figure 1 a semiconductor device "having the functions of a horizontal IGBT" (column 6, lines 37-39). The device of figure 1 functions as a lateral IGBT because substrate 1 has the opposite conductivity type to that of drain layer 2. Forming the substrate of the same conductivity type as that of drain layer 2 would make the device function as a lateral DMOS. Applicant does not claim that the substrate must have the opposite conductivity type to that of the drain layer. Therefore, although Huang's device functions as a lateral IGBT, Huang's structure is identical to that of the claimed lateral DMOS.

Furthermore, the recitation of a lateral DMOS occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In this case the body of the claim recites a structure that is identical to that of Huang's structure, since applicant does not claim that the substrate of the device have the opposite conductivity type to that of the drain layer.

6. Applicant argues that the body region of Huang is base region 3 and not region 9, as described by the examiner.

Applicant claims a second conductivity type body region surrounded by a first conductivity type buffer region, and a first conductivity type source region in the body region. Huang teaches a second conductivity type region 9 surrounded a first conductivity type buffer region 13 and a first conductivity type source region 11 in region 9. Therefore, region 9 can very well be characterized as a body region. Thus, Huang teaches a second conductivity type body region 9 surrounded a first conductivity type buffer region 13 and a first conductivity type source region 11 in the body region 9, as claimed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is (703) 308-8138. The Examiner is in the Office generally between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas, can be reached at (703) 308-2772.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is 308-0956.



O.N.
January 6, 2004

ORI NADAV
PATENT EXAMINER
TECHNOLOGY CENTER 2800